Dell Inc.
PowerEdge T130 (Intel Xeon E3-1220 v5, 3.00 GHz)

**SPECint\_rate2006 = 201**
**SPECint\_rate\_base2006 = 195**

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System:</strong> SUSE Linux Enterprise Server 12 3.12.28-4-default</td>
<td><strong>CPU Name:</strong> Intel Xeon E3-1220 v5</td>
</tr>
<tr>
<td><strong>Compiler:</strong> C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
<td><strong>CPU Characteristics:</strong> Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td><strong>Auto Parallel:</strong> No</td>
<td><strong>CPU MHz:</strong> 3000</td>
</tr>
<tr>
<td><strong>File System:</strong> ext4</td>
<td><strong>CPU(s) enabled:</strong> 4 cores, 1 chip, 4 cores/chip</td>
</tr>
<tr>
<td><strong>System State:</strong> Run level 3 multi-user</td>
<td><strong>CPU(s) orderable:</strong> 1 chip</td>
</tr>
<tr>
<td><strong>Base Pointers:</strong> 32-bit</td>
<td><strong>Primary Cache:</strong> 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Peak Pointers:</strong> 32/64-bit</td>
<td><strong>Secondary Cache:</strong> 256 KB I+D on chip per core</td>
</tr>
<tr>
<td><strong>Other Software:</strong> Microquill SmartHeap V10.2</td>
<td><strong>L3 Cache:</strong> 8 MB I+D on chip per chip</td>
</tr>
</tbody>
</table>

**Test date:** Oct-2014  
**Hardware Availability:** Nov-2015  
**Test sponsor:** Dell Inc.  
**Software Availability:** Sep-2015  
**Tests by:** Dell Inc.
Dell Inc.

PowerEdge T130 (Intel Xeon E3-1220 v5, 3.00 GHz)

Dell Inc.

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

SPECint_rate2006 = 201
SPECint_rate_base2006 = 195

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>400.perlbench</td>
<td>4</td>
<td>249</td>
<td>157</td>
<td>249</td>
<td>157</td>
<td>4</td>
<td>215</td>
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<tr>
<td>401.bzip2</td>
<td>4</td>
<td>452</td>
<td>85.4</td>
<td>452</td>
<td>85.4</td>
<td>4</td>
<td>423</td>
</tr>
<tr>
<td>403.gcc</td>
<td>4</td>
<td>214</td>
<td>151</td>
<td>214</td>
<td>151</td>
<td>4</td>
<td>214</td>
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<tr>
<td>429.mcf</td>
<td>4</td>
<td>142</td>
<td>257</td>
<td>142</td>
<td>256</td>
<td>4</td>
<td>142</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>4</td>
<td>374</td>
<td>112</td>
<td>375</td>
<td>112</td>
<td>4</td>
<td>374</td>
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<tr>
<td>456.hmmer</td>
<td>4</td>
<td>120</td>
<td>310</td>
<td>120</td>
<td>312</td>
<td>4</td>
<td>114</td>
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<tr>
<td>458.sjeng</td>
<td>4</td>
<td>381</td>
<td>127</td>
<td>381</td>
<td>127</td>
<td>4</td>
<td>381</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>4</td>
<td>415</td>
<td>2000</td>
<td>414</td>
<td>2000</td>
<td>4</td>
<td>414</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>4</td>
<td>347</td>
<td>255</td>
<td>347</td>
<td>255</td>
<td>4</td>
<td>344</td>
</tr>
<tr>
<td>471.omnetpp</td>
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<td>272</td>
<td>92.0</td>
<td>272</td>
<td>92.0</td>
<td>4</td>
<td>262</td>
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<tr>
<td>473.astar</td>
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<td>265</td>
<td>106</td>
<td>265</td>
<td>106</td>
<td>4</td>
<td>265</td>
</tr>
<tr>
<td>483.xalancbmk</td>
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<td>107</td>
<td>259</td>
<td>107</td>
<td>259</td>
<td>4</td>
<td>107</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS settings:
Virtualization Technology disabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb866b5a285932ceab81e28219e1
running on linux-zwtr Sun Oct 19 06:00:12 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E3-1220 v5 @ 3.00GHz
1 "physical id"s (chips)
4 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with
Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Dell Inc.
PowerEdge T130 (Intel Xeon E3-1220 v5, 3.00 GHz)

SPECint_rate2006 = 201
SPECint_rate_base2006 = 195

Platform Notes (Continued)

caution.)
  cpu cores : 4
  siblings  : 4
  physical 0: cores 0 1 2 3
  cache size : 8192 KB

From /proc/meminfo
  MemTotal:       66066084 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
  SUSE Linux Enterprise Server 12

From /etc/*release* /etc/*version*
  SuSE-release:
    SUSE Linux Enterprise Server 12 (x86_64)
    VERSION = 12
    PATCHLEVEL = 0
    # This file is deprecated and will be removed in a future service pack or release.
    # Please check /etc/os-release for details about this release.
  os-release:
    NAME="SLES"
    VERSION="12"
    VERSION_ID="12"
    PRETTY_NAME="SUSE Linux Enterprise Server 12"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
  Linux linux-zwtr 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
  (9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 19 05:58

SPEC is set to: /root/cpu2006-1.2
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda2      ext4  451G  8.4G  442G   2% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 0.3.16 09/09/2015
Memory:
  1x 00AD00000000 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
  2x 00AD0000020B HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
  1x 00AD00000800 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz

Continued on next page
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CPU2006 license: 55
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Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2006-1.2/lib32:/root/cpu2006-1.2/lib64:/root/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>       /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcfc: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge T130 (Intel Xeon E3-1220 v5, 3.00 GHz)

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CPU2006 license: 55
Test date: Oct-2014
Test sponsor: Dell Inc.
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Tested by: Dell Inc.
Software Availability: Sep-2015

Base Optimization Flags (Continued)

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
Dell Inc.

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Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
                 -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
           -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: basepeak = yes
456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
           -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
           -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
           -auto-ilp32

462.libquantum: basepeak = yes
464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
             -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
             -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
             -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
             -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
             -par-num-threads=1(pass 1) -prof-use(pass 2) -ansi-alias
             -opt-ra-region-strategy=block -Wl,-z,muldefs
             -L/sh -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

Continued on next page
Dell Inc.  

PowerEdge T130 (Intel Xeon E3-1220 v5, 3.00 GHz)  

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Peak Other Flags (Continued)

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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